

General

Title

Hip fracture: risk-adjusted proportion of hip fractures that were surgically treated within 48 hours of patient's initial admission to hospital, among patients age 65 and older.

Source(s)

Canadian Institute for Health Information (CIHI). Indicator metadata: hip fracture surgery within 48 hours. [internet]. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2015 May [accessed 2015 Jul 13].

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Access

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the risk-adjusted proportion of hip fractures that were surgically treated within 48 hours of patient's initial admission to hospital, among patients age 65 and older.

Rationale

Operative delay in older patients with hip fracture is associated with a higher risk of post-operative complications and mortality.

Wait time for surgery following hip fracture provides a measure of access to care. The wait time may be influenced by comorbid conditions, hospital transfers and practice differences related to certain types of medications, like blood thinners. However, longer waits may indicate lack of resources, physician unavailability and/or other issues related to the access to care.

Evidence for Rationale

Bergeron E, Lavoie A, Moore L, Bamvita JM, Ratte S, Gravel C, Clas D. Is the delay to surgery for isolated hip fracture predictive of outcome in efficient systems?. J Trauma. 2006 Apr;60(4):753-7. [PubMed](#)

Canadian Institute for Health Information (CIHI). Health indicators 2007. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2007. 87 p.

Canadian Institute for Health Information (CIHI). Indicator metadata: hip fracture surgery within 48 hours. [internet]. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2015 May [accessed 2015 Jul 13].

Canadian Institute for Health Information (CIHI). Waiting for health care in Canada: what we know and what we don't know. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2006.

Health Canada. Final report of the Federal Advisor on Wait Times. Ottawa (ON): Minister of Health Canada; 2006 Jun. 75 p.

Ministry of Health and Long-Term Care (MOHLTC). First common benchmarks will allow Canadians to measure progress in reducing wait times (press release). Toronto (ON): Ministry of Health and Long-Term Care (MOHLTC); 2005 Dec 12.

Vidal EI, Moreira-Filho DC, Coeli CM, Camargo KR, Fukushima FB, Blais R. Hip fracture in the elderly: does counting time from fracture to surgery or from hospital admission to surgery matter when studying in-hospital mortality?. Osteoporos Int. 2009 May;20(5):723-9. [PubMed](#)

Weller I, Wai EK, Jaglal S, Kreder HJ. The effect of hospital type and surgical delay on mortality after surgery for hip fracture. J Bone Joint Surg Br. 2005 Mar;87(3):361-6. [PubMed](#)

Primary Health Components

Hip fracture; surgery; wait time; elderly

Denominator Description

The number of hip fractures among patients age 65 and older that were surgically treated in an acute care hospital (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

The number of hip fractures that were surgically treated within 48 hours of initial admission (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and

organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

Unspecified

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Hospital Inpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

Age greater than or equal to 65 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Timeliness

Data Collection for the Measure

Case Finding Period

April 1 to March 31

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Institutionalization

Patient/Individual (Consumer) Characteristic

Therapeutic Intervention

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

The number of hip fractures among patients age 65 and older that were surgically treated in an acute care hospital

Hip fracture as most responsible diagnosis (MRDx), but not also as a diagnosis type (2); or
Where another diagnosis is coded as MRDx and also a type (2), and a diagnosis of hip fracture is coded as a diagnosis type (1) or (W), (X), (Y) but not also as a diagnosis type (2); or
Where convalescence or rehabilitation are coded as MRDx and hip fracture is coded as diagnosis type (1) or (W), (X), (Y) but not also as a diagnosis type (2).

Criterion 1 (a, b, c) along with relevant Canadian Classification of Health Interventions (CCI) procedure code*:

Fixation, hip joint
Implantation of internal device, hip joint
Fixation, femur
Implantation of internal device, pelvis

Age at admission: 65 years and older

Sex recorded as male or female

Admission to an acute care institution (Facility Type Code = 1)

Admission category recorded as emergent/urgent (Admission Category Code = U)

Canadian resident (Canadian postal code)

Note:

A person can have more than one hip fracture and one repair in the reference period; therefore, a person can be included in the indicator more than once.

Refer to the original measure documentation for the administrative codes.

*Code may be recorded in any position. Procedures with status attribute A (abandoned after onset) or OOH indicator flag Y (out-of-hospital intervention) are excluded.

Exclusions

Records with an invalid health card number
Records with an invalid gender
Records with an invalid date of birth
Cadaveric donor or stillbirth records (Admission Category = R or S)
Records with an invalid admission date or time
Records with an invalid discharge date or time
Records with an invalid procedure date or time
Discharged as self sign-out or did not return from a pass (Discharge Disposition Code = 06 or 12)
A hip fracture event where hip fracture is coded as post-admission diagnosis (diagnosis type [2]) on the index hospitalization or the surgery hospitalization (regardless of the admission category)

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

The number of hip fractures that were surgically treated within 48 hours

Note: Wait time is calculated from the admission date/time of the first hospitalization with hip a fracture diagnosis (index hospitalization) to the procedure date/time of the hip fracture surgery (surgery hospitalization). If hip fracture surgery is not performed during the index hospitalization, records are linked according to the following criteria:

Index and surgery hospitalizations having the same hip fracture diagnosis code(s) (coded as diagnosis type [M], [1], [W], [X] or [Y] matching the fourth digit of the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Canadian Enhancement (ICD-10-CA) code.
The time interval between the admission date for the index hospitalization and the admission date for the surgery hospitalization is within 28 days.

Exclusions

Unspecified

Numerator Search Strategy

Institutionalization

Data Source

Administrative clinical data

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Description of Allowance for Patient or Population Factors

- Indicators are reported at the national, provincial/territorial, and regional levels.

- Unless otherwise specified, for indicators based on place of residence, data is reported based on the region of the patient's residence, not region of hospitalization. Consequently, these figures reflect the hospitalization experience of residents of the region wherever they are treated, including out of province, as opposed to the comprehensive activity of the region's hospitals (that will also treat people from outside of the region). Hospitalizations occurring in the U.S. or abroad are not included.
- For indicators based on place of service (where the patient was treated), data is reported based on the administrative region of the facility (e.g., region of hospitalization).
- Rates are standardized or risk-adjusted wherever possible to facilitate comparability across provinces/regions/facilities and over time.

Risk Adjustment

Statistical regression modelling, an indirect method of standardization in risk adjustment, was used to risk-adjust patient characteristics. Risk factors that were controlled for include age, gender and selected pre-admit comorbid diagnoses that were applicable to the indicator. The selected risk factors were identified based on a literature review, clinical evidence and expert group consultations using the principles of appropriateness, viability (i.e., sufficient number of events) and data availability. Risk factors must be listed as significant pre-admit conditions on the patient's abstract for them to be identified for risk adjustment. For indicators relating to readmission after certain medical conditions (e.g., Readmission After Acute Myocardial Infarction [AMI], Overall Readmission), diagnoses were flagged as risk factors if they were recorded as pre-admit conditions on any of the records within patients' episodes of care. For all other indicators, risk factors were flagged if conditions were recorded as pre-admit diagnoses on the record where the outcome/denominator was abstracted.

Risk-adjusted rates are calculated at the hospital, health administration region and provincial/territorial levels. Regional and provincial risk-adjusted rates are aggregated hospital-level data.

Refer to the *General Methodology Notes* document (see the "Companion Documents" field) for additional information on risk adjustment. Information on Canada averages, model specifications (coefficients and p-values) and International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Canadian Enhancement (ICD-10-CA) codes used to flag risk factors can be found in the *Model Specifications* document (see the "Companion Documents" field).

Standard of Comparison

not defined yet

Prescriptive Standard

In Canada, a benchmark of hip fracture fixation within 48 hours was set by federal, provincial and territorial governments in December 2005.

Evidence for Prescriptive Standard

Canadian Institute for Health Information (CIHI). Indicator metadata: hip fracture surgery within 48 hours. [internet]. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2015 May [accessed 2015 Jul 13].

Identifying Information

Original Title

Hip fracture surgery within 48 hours.

Measure Collection Name

Health Indicators ePublication 2015

Submitter

Canadian Institute for Health Information - Nonprofit Organization

Developer

Canadian Institute for Health Information - Nonprofit Organization

Funding Source(s)

Canadian Government

Composition of the Group that Developed the Measure

Employees: Canadian Institute for Health Information (CIHI) Health Indicators

Financial Disclosures/Other Potential Conflicts of Interest

None

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 May

Measure Maintenance

Annually

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

This measure updates a previous version: Canadian Institute for Health Information (CIHI). Health indicators 2013: definitions, data sources and rationale. Ottawa (ON): Canadian Institute for Health

Information (CIHI); 2013 May. 89 p.

The measure developer reaffirmed the currency of this measure in April 2016.

Measure Availability

Source available from the [Canadian Institute for Health Information \(CIHI\) Web site](#)

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For more information, contact CIHI at 4110 Yonge Street, Suite 300, Toronto, Ontario, Canada, M2P 2B7; Phone: 416-481-2002; Fax: 416-481-2950; E-mail: hsp@cihi.ca; Web site: www.cihi.ca

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Companion Documents

The following are available:

Canadian Institute for Health Information (CIHI). Indicator library: model specifications - clinical indicators, May 2015. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2015 May. 28 p. This document is available from the [Canadian Institute for Health Information \(CIHI\) Web site](#)

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Canadian Institute for Health Information (CIHI). Indicator library: general methodology notes - clinical indicators, March 2015. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2015 Mar. 19 p. This document is available from the [CIHI Web site](#) .

Canadian Institute for Health Information (CIHI). Canadian coding standards for version 2015 ICD-10-CA and CCI. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2015. 511 p. This document is available from the [CIHI Web site](#) .

Canadian Institute for Health Information (CIHI). Health indicators interactive tool. [internet]. Ottawa (ON): Canadian Institute for Health Information (CIHI); [accessed 2015 Jan 20]. This tool is available from the [CIHI Web site](#) .

NQMC Status

This NQMC summary was completed by ECRI Institute on March 18, 2013. The information was verified by the measure developer on May 17, 2013.

The CIHI informed NQMC that this measure was updated on October 31, 2013 and provided an updated version of the NQMC summary. This NQMC summary was reviewed and updated accordingly by ECRI Institute on February 21, 2014.

This NQMC summary was updated again by ECRI Institute on September 4, 2015. The information was verified by the measure developer on November 6, 2015.

The information was reaffirmed by the measure developer on April 29, 2016.

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Questions and inquiries may be directed to: CIHI, Health Indicators, 4110 Yonge Street, Suite 300, Toronto, Ontario, Canada, M2P 2B7; Phone: 416-481-2002; Fax: 416-481-2950.

Production

Source(s)

Canadian Institute for Health Information (CIHI). Indicator metadata: hip fracture surgery within 48 hours. [internet]. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2015 May [accessed 2015 Jul 13].

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